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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

FERRIS III, FRED O

ART UNIT

PAPER NUMBER

2128

DATE MAILED: 01/15/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/589,758

Applicant(s)

HAWS ET AL.

Examiner

Fred Ferris

Art Unit

2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 June 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. *Claims 1-6 have been presented for examination. The examiner has rejected claims 1-6.*

Drawings

2. *Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance. Applicant's specification (page 5, line 21) indicates that Figure 1 represents a conventional CAD drawing.*

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. *Claims 1-6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.*

Specifically, claims 1-6 include limitations relating to setting parameters of dimension annotations, creating a target object, and automatically generating dimension

annotations that have not been sufficiently described in the specification. While the specification, for example, makes reference to “automatically” creating dimension annotations and extension lines (page 6, lines 4, 7, 26, page 7, lines 11, 15, 27), and “automatically” generating termination symbols by an adaptive dimensioning feature (page 6, line 17), it discloses no algorithms, flowcharts, or techniques for actually generating dimensions, ^ecrating a target object, or setting parameters of dimension annotations. As another example, page 7, line 11 of the specification states that dimension annotations have “predetermined parameters” with the respective objects but gives no indication of exactly what the parameters are, how they are defined, or specifically how they relate to the respective objects. Accordingly, one skilled in the art would not know how to make and/or use the claimed invention without undue experimentation.

4. Claims 1-6 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. Matter critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

Specifically, implementing the features of the claimed invention relating to creating dimension annotations, generating termination symbols, and creating a target object requires interfacing with an existing CAD programs (such as AutoCAD) software drivers and subroutines that control object placement, display of text (annotations), and object dimensioning. The specification is completely silent on the specifics of how the claimed invention would interact (i.e. interface) with an existing CAD program to, for

example, "automatically" generate new termination symbols or dimension annotations. Therefore, matter that is critical to the practice of the claimed invention for supporting the limitations of the claims is absent from the specification.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. *Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are:*

- *steps required to "automatically" generate dimension annotations*
- *steps required to "automatically" adjust/modify length or relative position*

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. ***Claims 1-6 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by U.S. Patent 6,232,985 issued to Chase et al.***

Regarding independent claims 1, 3, and 5: *Chase discloses a system for automatically (dynamically) annotating CAD dimensions (CL1-L33) including text (CL3-L63), lines (CL1-L37-44), and symbols (arc, circles, polyline: CL3-L21). Chase further*

discloses the creation of user selected objects (CL4-L36, CL5-L15-31, Fig. 4: length selection for objects is inherent in AutoCAD systems), and dynamically generating (automatic) dimension annotations for the selected object (CL5-L32-47) based on modified (adjusted) positions. (Abstract, Summary of Invention, CL2-L37-67, CLCL6-L7-19, Figs. 1-5, Tabs. I & II)

Regarding dependent claims 2, 4, and 6: These claims are drawn to automatically modifying the length/position of an object in response to a change in the dimension annotation. The examiner asserts that this is an inherent feature to the AutoCAD program as is disclosed in the prior art. (CL2-L29-33)

7. Claims 1-6 are also rejected under 35 U.S.C. 102(b) as being clearly anticipated by U.S. Patent 6,256,595 issued to Schwalb et al.

Regarding claims 1-6: Schwalb discloses method and system for automatically displaying dimensional text, lines, and symbols in CAD drawing system. For example, column 4, line 17 recites:

*"The invention also relates to a repositioning system for a computer generated geometric model represented on a display screen. The geometric model has associated dimensions displayed along with the geometric model on the display screen. The repositioning system includes a repositioner which **repositions the dimension to a desired position relative to the model**, and a repositioned dimension display which **displays the dimension at the desired position relative to the model**. The geometric model may be a sheet metal part model or a 3-D sheet metal part model. The repositioned dimension display includes an extension line creator. The **extension line creator creates and displays extension lines on the display screen** if the arrow line has been repositioned so that the closest end is no longer adjacent to the selected entity. The extension lines extend between each attachment point and the closest end of an arrow line.*

At column 21, line 45 Schwalb recites:

"Automatic repositioning of the dimension may be necessary when a part is

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zoomed in upon, such that the attachment points are within the view port but the geometry of the dimension is not, as illustrated in FIGS. 22a and 22b. Thus, the dimension needs to be repositioned to fit within the view port. Such a repositioning involves the following two steps: 1) computing the 3-D points where the view port cuts the dimension; and 2) calculating the repositioning data according to where the dimension is cut. **When the repositioning is performed, the updated view of the part with dimension information may be displayed, as shown in FIG. 22c."**

(Also see: Abstract, Summary of Invention, CL8-L1-CL9-L53, Figs. 2-16)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over "AutoCAD User's Guide", Release 14, Autodesk, Inc., December 5, 1997 (of record) in view of U.S. Patent 5,999,186 issued to Jackson.

Independent claims 1, 3 and 5 are drawn to:

Method, computer code, and storage device for annotating a CAD drawing by:
Dimension text, lines, extension lines, and termination symbol annotation parameters

Creating target object by selecting length
Generating (automatic) dimension annotations for target object
Adjusting (automatic) modified object length/position dimension annotations

Regarding independent claims 1, 3, and 5: AutoCAD 14 discloses a CAD drawing system incorporating annotation of dimensions (pp. 405-409, 738, 364, 372), text (pp. 413-415), lines (pp. 331-334), extension lines (pp. 397-401), termination lines (arrowheads: pp. 365-380), and related input parameters (pp. 365—381). AutoCAD further proves facilities for creating a target object (pp. 162-172, 242, 272) and generating dimension annotations for a target object. (pp. 401-414, 364, 366) Also see: Chapters 6, 7, 9, and 10.

AutoCAD does not explicitly teach automatically adjusting modified object length/position dimension annotations. (Although, as noted above, all of the features required to facilitate automatic modification of an objects length/position based on a modified dimension annotation (or visa versa) are included in AutoCAD 14)

Jackson discloses automatic parametric dimensioning of CAD objects by recalculating the relative coordinate data for each entity. (Abstract, Summary of Invention, CL4-L62-CL7-L55, CL9-L51-CL10-L23, CL13-L41, Figs. 3-14, Tab. 1)

It would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to modify the teachings of AutoCAD 14 relating to a CAD drawing system incorporating annotation of dimensions relating to text, lines and objects, with the teachings of Jackson relating to automatic parametric dimensioning of CAD objects, to realize the claimed invention. An obvious motivation exists since, as referenced in the prior art, there is a need for a CAD system which provides the

capability to more efficiently and conveniently dimension geometric objects (Jackson: CL1-L65). Therefore, a skilled artisan would have made an effort to become aware of what capabilities had already been developed in the market place and, hence, would have been motivated to modify the teachings of AutoCAD 14 with the teachings of Jackson in order to reduce development time and cost.

Regarding dependent claims 2, 4, and 6: These claims are drawn to automatically modifying the length/position of an object in response to a change in the dimension annotation. As noted above, the features included in the AutoCAD 14 program support this capability.

While the specification for the claimed invention is delinquent in the areas cited under 112(1) and 112(2) rejections, the examiner has made prior art rejections based on the limited scope of information contained within the specification and the language of the claims.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 5,390,294 issued to Takeuchi teaches automatic CAD dimensioning.

U.S. Patent 5,729,750 issued to Ishida teaches automatic CAD dimensioning.

U.S. Patent 6,014,503 issued to Nagata teaches automatic CAD dimensioning.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Ferris whose telephone number is 703-305-9670 and whose normal working hours are 8:30am to 5:00pm Monday to Friday.

Any inquiry of a general nature relating to the status of this application should be directed to the group receptionist whose telephone number is 703-305-3900.

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